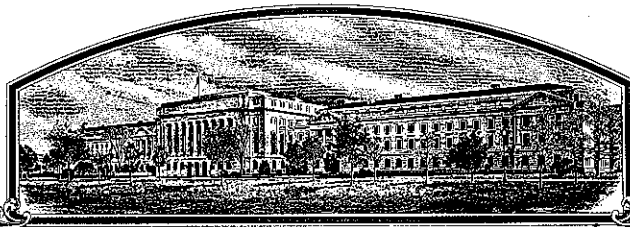


No.



9200181

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Asgrow Seed Company

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (AT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'A5560'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this 30th day of September in the year of our Lord one thousand nine hundred and ninety-four.

Attest:

Kenneth H. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Mike Esny
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) Asgrow Seed Company		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO. XP5590	3. VARIETY NAME A5560
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) 9646-190-20 7000 Portage Road Kalamazoo, MI 49001		5. PHONE (Include area code) 616-385-6649	FOR OFFICIAL USE ONLY PVPO NUMBER 9200181 F I L I N G Date May 1, 1992 Time <input type="checkbox"/> A.M. <input type="checkbox"/> P.M. F E E S Filing and Examination Fee: \$2150.- Date April 7, 1992 Certificate Fee: \$250.- Date September 21, 1991
6. GENUS AND SPECIES NAME Glycine Max	7. FAMILY NAME (Botanical) Leguminosae		
8. CROP KIND NAME (Common Name) Soybean	9. DATE OF DETERMINATION November 1989		
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation			
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware		12. DATE OF INCORPORATION March 22, 1968	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS			
Mr. Gary E. Starwalt 9646-190-20 7000 Portage Road Kalamazoo, MI 49001		Dr. Alan K. Walker 5926 Hwy. 14 - East Janesville, WI 53546	
		PHONE (Include area code): 616-385-6649	

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)

a. ☒ Exhibit A, Origin and Breeding History of the Variety.

b. ☒ Exhibit B, Novelty Statement.

c. ☒ Exhibit C, Objective Description of Variety.

d. ☒ Exhibit D, Additional Description of Variety.

e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.

f. ☐ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office _____

g. ☒ Filing and Examination Fee (\$2,150) made payable to "Treasurer of the United States."

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act.)

☐ YES (If "YES," answer items 16 and 17 below) ☒ NO (If "NO," skip to item 18 below)

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?

☐ YES ☒ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?

☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?

☐ YES (If "YES," through ☐ Plant Variety Protection Act ☐ Patent Act. Give date: _____)

☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?

☐ YES (If "YES," give names of countries and dates)

☒ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT (Owner(s)) Gary E. Starwalt	CAPACITY OR TITLE Soybean Product Manager	DATE 3/24/92
SIGNATURE OF APPLICANT (Owner(s)) Alan K. Walker	CAPACITY OR TITLE Director of Soybean Research	DATE 3/13/92

Soybean A5560
US Plant Variety Protection Applicant
Asgrow Seed Company

EXHIBIT A
ORIGIN AND BREEDING HISTORY

Summer 1984	Original cross made at Marion, AR Cross number M841103 Parentage = X5512 x EPPS X5512 = D74-7741 x N73-693
Winter 1984-85	F1 plants grown near Isabela, PR in lighted hills.
Winter 1985-86	F2 advanced to F4 by modified single- seed descent near Isabela, PR.
Summer 1986	F4 bulk population of M841103 grown at Marion, AR. Over 200 single plants selected.
Summer 1987	F5 progeny rows of M841103 grown at Marion, AR. Row C88-3311 was selected and composited.
Summer 1988	C88-3311 was yield tested at two locations, two replications each. Screened to soybean cyst nematode (race 14) and found to be resistant. Tested as entry 10 in 8MP559.
Summer 1989	C88-3311 tested for yield in seven environments as entry 27 in 9MS503. Sixty F7 single plants selected to begin breeder seed purification. Entry 27 named X5590.
Summer 1990	X5590 tested for yield in ten environments as entry 6 in OMV501. Breeder seed increase grown at Marion, AR with 100 pounds harvested. X5590 designation changed to XP5590.
Winter 1990-91	Seventy-five pounds of XP5590 increased to 900 pounds in Costa Rica.
Summer 1991	XP5590 tested for yield in 11 environments as entry 2 in 1MV501. Breeder seed increased to 900 units of Basic I at Matthews, MO. XP5590 advanced to stage 4 designation, A5560.

9200181

Soybean A5560
US Plant Variety Protection Applicant
Asgrow Seed Company

EXHIBIT A
ORIGIN AND BREEDING HISTORY

Summer 1992 A5560 yield tested as entry 2 in V501 at
eight locations.

Foundation seed of A5560 produced at the
Mathews, Missouri production plant.

A5560 is uniform and stable within
commercially acceptable limits based on
trial/observations since F₇ single plants
were selected in November of 1989. As with
other soybean varieties, variants can occur
for almost any characteristic during the
course of repeated sexual reproduction.

9200181

Soybean A5560
US Plant Variety Protection Applicant
Asgrow Seed Company

EXHIBIT B
NOVELTY STATEMENT

To our knowledge A5560 most nearly resembles FORREST and EPPS. Differences include, but are not necessarily restricted to the following:

A5560 has purple flowers and is resistant to race 14 of soybean cyst nematode (Heterodera glycines) whereas FORREST has white flowers and is susceptible to race 14 of soybean cyst nematode.

A5560 has tawny pubescence and black hila whereas EPPS has grey pubescence and imperfect black hila.

U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 LIVESTOCK, MEAT, GRAIN & SEED DIVISION
 PLANT VARIETY PROTECTION OFFICE
 BELTSVILLE, MARYLAND 20705


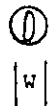

EXHIBIT C
 (Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
 SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) Asgrow Seed Company	TEMPORARY DESIGNATION XP5590	VARIETY NAME A5560
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) 9646-190-20 7000 Portage Road Kalamazoo, MI 49001		FOR OFFICIAL USE ONLY PVPO NUMBER 9200181

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g.,). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:

<input type="text" value="2"/>			
	1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)		2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
	3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)		4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ 2. SEED COAT COLOR: (Mature Seed)

<input type="text" value="1"/>	1 = Yellow	2 = Green	3 = Brown	4 = Black	5 = Other (Specify) _____
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3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

<input type="text" value="2"/>	1 = Dull ('Corsoy 79'; 'Braxton')	2 = Shiny ('Nebsoy'; 'Gasoy 17')
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★ 4. SEED SIZE: (Mature Seed)

<input type="text" value="1"/> <input type="text" value="3"/>	Grams per 100 seeds
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★ 5. HILUM COLOR: (Mature Seed)

<input type="text" value="6"/>	1 = Buff	2 = Yellow	3 = Brown	4 = Gray	5 = Imperfect Black	6 = Black	7 = Other (Specify) _____
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★ 6. COTYLEDON COLOR: (Mature Seed)

<input type="text" value="1"/>	1 = Yellow	2 = Green
--------------------------------	------------	-----------

★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:

<input type="text" value="1"/>	1 = Low	2 = High
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★ 8. SEED PROTEIN ELECTROPHORETIC BAND:

<input type="text" value="2"/>	1 = Type A (SP ^{1a})	2 = Type B (SP ^{1b})
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★ 9. HYPOCOTYL COLOR:

<input type="text" value="4"/>	1 = Green only ('Evans'; 'Davis')	2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
	3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')	
	4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')	

★ 10. LEAFLET SHAPE:

<input type="text" value="3"/>	1 = Lanceolate	2 = Oval	3 = Ovate	4 = Other (Specify) _____
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11. LEAFLET SIZE:

☐ 21 = Small ('Amsoy 71'; 'A5312')
3 = Large ('Crawford'; 'Tracy')

2 = Medium ('Corsoy 79'; 'Gasoy 17')

12. LEAF COLOR:

☐ 31 = Light Green ('Weber'; 'York')
3 = Dark Green ('Gnome'; 'Tracy')

2 = Medium Green ('Corsoy 79'; 'Braxton')

★ 13. FLOWER COLOR:

☐ 2

1 = White

2 = Purple

3 = White with purple throat

★ 14. POD COLOR:

☐ 1

1 = Tan

2 = Brown

3 = Black

★ 15. PLANT PUBESCENCE COLOR:

☐ 2

1 = Gray

2 = Brown (Tawny)

16. PLANT TYPES:

☐ 11 = Slender ('Essex'; 'Amsoy 71')
3 = Bushy ('Gnome'; 'Govan')

2 = Intermediate ('Amcor'; 'Braxton')

★ 17. PLANT HABIT:

☐ 1

1 = Determinate ('Gnome'; 'Braxton')

2 = Semi-Determinate ('Will')

3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ 18. MATURITY GROUP:

☐ 0 ☐ 81 = 000
9 = VI2 = 00
10 = VII3 = 0
11 = VIII4 = I
12 = IX5 = II
13 = X

6 = III

7 = IV

8 = V

★ 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

★

☐ 2Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

★

☐ 0Bacterial Blight (*Pseudomonas glycinea*)

★

☐ 0Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

★

☐ 0Brown Spot (*Septoria glycines*)Frogeye Leaf Spot (*Cercospora sojae*)

★

☐ 0

Race 1

☐ 0

Race 2

☐ 0

Race 3

☐ 0

Race 4

☐ 0

Race 5

☐

Other (Specify)

☐ 0Target Spot (*Corynespora cassicola*)☐ 0Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)☐ 0Powdery Mildew (*Microspheera diffusa*)

★

☐ 0Brown Stem Rot (*Cephalosporium gregatum*)☐ 2Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

9200181

FUNGAL DISEASES: (Continued)

- ★ ☐ 0 Pod and Stem Blight (*Diaporthe phaseolorum* var; *sojae*)
- ☐ 0 Purple Seed Stain (*Cercospora kikuchii*)
- ☐ 0 Rhizoctonia Root Rot (*Rhizoctonia solani*)
- Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)
- ★ ☐ 1 Race 1 ☐ 0 Race 2 ☐ 1 Race 3 ☐ 0 Race 4 ☐ 0 Race 5 ☐ 0 Race 6 ☐ 0 Race 7
- ☐ 0 Race 8 ☐ 0 Race 9 ☐ Other (Specify) _____

VIRAL DISEASES:

- ☐ 0 Bud Blight (Tobacco Ringspot Virus)
- ☐ 0 Yellow Mosaic (Bean Yellow Mosaic Virus)
- ★ ☐ 0 Cowpea Mosaic (Cowpea Chlorotic Virus)
- ☐ 0 Pod Mottle (Bean Pod Mottle Virus)
- ★ ☐ 0 Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

- Soybean Cyst Nematode (*Heterodera glycines*)
- ★ ☐ 0 Race 1 ☐ 0 Race 2 ☐ 2 Race 3 ☐ 0 Race 4 ☐ 2 Other (Specify) Race 14
- ☐ 0 Lance Nematode (*Hoplolaimus Colombus*)
- ★ ☐ 1 Southern Root Knot Nematode (*Meloidogyne incognita*)
- ★ ☐ 0 Northern Root Knot Nematode (*Meloidogyne Hapla*)
- ☐ 1 Peanut Root Knot Nematode (*Meloidogyne arenaria*)
- ☐ 0 Reniform Nematode (*Rotylenchulus reniformis*)
- ☐ 2 OTHER DISEASE NOT ON FORM (Specify): Sudden death syndrome (*Fusarium solani*)

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ★ ☐ 0 Iron Chlorosis on Calcareous Soil
- ☐ 0 Other (Specify) _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ☐ 0 Mexican Bean Beetle (*Epilachna varivestis*)
- ☐ 0 Potato Leaf Hopper (*Empoasca fabae*)
- ☐ 0 Other (Specify) _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	Forrest	Seed Coat Luster	Forrest
Leaf Shape	Forrest	Seed Size	Forrest
Leaf Color	Forrest	Seed Shape	Forrest
Leaf Size	Forrest	Seedling Pigmentation	Forrest

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/POD
				CM Width	CM Length	% Protein	% Oil		
Submitted A5560	138	1.7	76			42.4	20.3	13	
Hutcheson Name of Similar Variety	138	1.6	75			40.1	21.4	16	

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM: (Dry Weight)

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A₂ in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

9200181

Soybean A5560
US Plant Variety Protection Applicant
Asgrow Seed Company

EXHIBIT D
ADDITIONAL DESCRIPTION OF THE VARIETY

A5560 is a new mid-Group V variety that has excellent yield potential along with strong defensive and agronomic traits. A5560 is a determinate plant type of medium height with purple flowers, tawny pubescence on tan pods, and has shiny yellow seeds with black hila. The peroxidase activity of the seedcoats is low. The emergence, standability, and appearance of A5560 are all excellent. Resistance to stem canker, sudden death syndrome, and frogeye leafspot protect A5560 from these common Midsouth diseases. A5560 also has excellent resistance to races 3 and 14 of soybean cyst nematode.

9200181

Soybean A5560
US Plant Variety Protection Applicant
Asgrow Seed Company

EXHIBIT E
STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP

A5560 was originated and developed by Christopher Tinius, PhD, an Asgrow plant breeder. By agreement between employee and Asgrow Seed Company, all rights to any invention, discovery, or development made by an employee are assigned to the Company. No rights to such invention, discovery, or development are retained by the employee.